Cochlea Radiation Dose Correlates with Hearing Loss Following Stereotactic Radiosurgery of Vestibular Schwannoma.

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Public Summary:
Radiosurgery is an accepted treatment for tumors of the eighth cranial nerve (vestibular schwannoma). For multisession radiosurgery, no published data relate the volume and dose of cochlear irradiation to quantified risk of hearing loss. We conducted a retrospective, dosimetric study to evaluate the relationship between hearing loss after SRS and the dose-volume of irradiated cochlea. Larger cochlear volume was associated with lower risk of hearing loss following tri-session SRS for vestibular schwannoma. Controlling for this phenomenon, higher radiation dose and larger irradiated cochlear volume were significantly associated with higher risk of hearing loss. This study confirmed and quantified the risk of hearing loss following tri-session SRS for vestibular schwannoma.

Scientific Abstract: